

# Thinking Fast and Slow

## 1. The Character of The Story.

### a. Two systems:

- i. **System 1 (automatic system)** operates automatically and quickly, with little or no effort and no sense of voluntary control.

#### 1. Some **example** of system

- Detect that one object is more distant than another.
- Orient to the source of a sudden sound.
- Complete the phrase “bread and ...”
- Answer  $2+2 = ?$

- ii. **System 2 (effortful system)** allocates attention to the effortful mental activities that demand it, including complex computations. The operations of system 2 are often associated with the subjective experiences of agency, choice, and concentration.

#### 1. Some **example** of system 2

- Look for the woman with white hair.
- Focus on the voice of a particular person in a crowded and noisy room.

- iii. When **we think of ourselves, we identify with system 2, the conscious, reasoning self** that has beliefs, make choices, and decides what to think about and what to do.
- iv. The automatic operations of system 1 generate surprisingly complex patterns of ideas, but only the slower system 2 can construct thought in an orderly series of steps.
- v. Intense focusing on a task can make people effectively blind, even to stimuli that normally attract attention.

b. **Plot Synopsis:**

- i. Most of what system 2 think do originates in your system 1, but system 2 takes over when things get difficult, and it normally has the last word.

c. **Conflict:**

- i. You experienced a conflict between a task that you intended to carry out and an automatic response that interfered with it.
- ii. One of the tasks of system 2 is to overcome the impulses of system 1. In another words, system 2 is in charge of self-control.

d. **Illusion:**

- i. To resist the illusion of system 1, you must learn to mistrust your impressions of the length of lines when fins are attach to them. To implement that rule, you must be able to recognize the illusory pattern and recall what you know about it. Not illusion are visual, there are illusions of thought, which we call cognitive illusions.
- ii. Even when cues to likely errors are available, errors can be prevented only by the enhanced monitoring and effortful activity of system 2.

## **2. Attention and Effort**

→the defining feature of system 2, is that its operations are effortful, and one of its main characteristics is laziness, a reluctance to invest more effort than is strictly necessary.

a. **Mental Effort**

- i. **Law of least effort:** as you become skilled in a task its demand for energy diminishes.

1. Highly intelligent individuals need less effort to solve the same problems, as indicated by both pupil size and brain activity.
2. In economy of action, effort is cost, and the acquisition of skill is driven by the balance of benefits and costs. Laziness is built deep into our nature.

ii. **Effortful task:**

1. Effort is required to maintain simultaneously in memory several ideas that require separate actions.
2. Switching from one task to another is effortful, especially under time pressure.

### 3. **The Lazy Controller.**

a. **Flow**

- i. **A state of effort-less concentration** so deep that they lose their sense of time, of themselves, of their problems, and their description of the joy of that state are so compelling it is called “optimal experience”.
- ii. Flow neatly separate the **two forms of effort:** concentration on the task and the **deliberate control of attention.**

b. **The Busy and Depleted System.**

- i. Self-control ( depend upon system 2 )and cognitive ( involving in conscious mental activity such as, thinking, reasoning, remembering ) effort are forms of mental work.
- ii. People who are cognitively busy are also more likely to make selfish choices, use sexist language, and make

superficial judgments in social situations. Memorizing and repeating digits, put load on system 2, few drinks same as sleepless night.

- iii. Further, too much concern about how well one is doing in a task sometimes disrupts performance by loading short-term memory with pointless anxious thoughts.
- iv. **Ego Depletion:** Effort of will or self-control is tiring, if you have to force yourself to do something, you are less willing or less able to exert self-control when the next challenge comes around. Involving in active self-control drops your glucose, and can be undone by ingesting glucose.

c. **Lazy System**

- i. One of the main function of system 2 is to monitor and control thoughts and action suggested by system 1, allowing some to be expressed directly in behavior and suppressing or modifying others.
- ii. a plausible answer came to mind quickly. Overriding requires hard work, more plausible you think it is, make it difficult to check logic underlying it and most people avoid to check the answers.

#### **4. The associative machine.**

→ **associative activation:** idea that have been evoked **trigger many other ideas**, in a spreading cascade of activity in your brain, that trigger many others ideas, but only one get register in consciousness.

→ three principle of association: **resemblance**, **contiguity** of time and place, and **causality**.

→ **Priming:**

→ the idea that exposure to one stimulus may influence a response to a subsequent stimulus, without conscious guidance or intention. Like thinking of food, money, etc.

- **Ideomotor effect:** the influencing of an action by the idea. like travelling with old person make you walk slower.
- It also can happen in reverse order, like nodding head makes you say more 'yes' than 'no'.
- **Lady Macbeth effect:** a psychological condition in which people who have done something wrong feel a need to wash their hands or body in order to clear their conscience.

## **5. Cognitive Ease.**

→ **Cognitive Ease** (the ease with our brain processes information) and range between "Easy" and "Strained".

- Easy are sign that things are going well -- no threat or anything new that need to redirect attention or effort.
- Strained indicates that a problem exists, which required increased mobilization of system 2.
- Repeated experience, clear display, primed idea, and good mood make cognitive ease which makes you feel familiar, true, good, and effortless. Further, system 1 produce familiarity, and system 2 relies on the impression for a true/false judgement.

→ **Make people believe false:** A reliable way to make people believe in falsehood is frequent repetition, because familiarity is not easily distinguished from truth.

→ **Write persuasive message:** The general principle is that anything you can do to reduce cognitive strain will help, so you should first maximize legibility.

- If your message is to be printed, use **high-quality paper** to maximize the contrast between characters and their background.
- If you care about being thought credible and intelligent, do not use complex language where **simpler language** will do.
- People who use **long words** needlessly is taken as a sign of **poor intelligence** and low credibility.
- **To make it more memorable:** put your idea in verse, they more likely to be taken as truth.
- If you quote source use simpler name.

→ Familiarity breeds liking. This is mere exposure effect. (link between the repetition of an arbitrary stimulus and the mild affection that people eventually have for it. )

→ The good mood, intuition, creativity, gullibility, and increased reliance on system 1 from a cluster. At the other pole, sadness, vigilance, suspicion, an analytic approach, and increased effort also go together. A happy mood loosens the control of system 2 over performance: when in a good mood, people become more intuitive and more creative but also less vigilant and more to logical error.

## **6. Norms (standard)and Causes**

→ “When the second applicant also turned out to be an old friends of mine, I wasn’t quite as surprised. Very little repetition is needed for a new experience to feel normal!”

→ “When we survey the reaction to these products, let’s make sure we don’t focus exclusively on the average. We should consider the entire range of normal reactions.

→ “She can’t accept that she was just unlucky; she needs a causal story. She will end up thinking that someone intentionally sabotaged her work”

## **7. A machine for jumping to conclusions.**

→ System 1 is gullible and biased to believe, system 2 is in charge of doubting and unbelieving, but system 2 is sometimes busy, and often lazy. Indeed, there is evidence that people are more likely to

be influenced by empty persuasive messages, such as commercials, when they are tired and depleted.

→ A deliberate search for confirming evidence, known as positive test strategy, is also how system 2 tests a hypothesis. Like, “Is Sam Friendly?” different instances of Sam’s behavior will come to mind that would if you had been asked “Is Sam unfriendly?”

→” She knows nothing about this person’s management skills. All she is going by is the **halo effect** from a good presentation. **The tendency to like or dislike everything about a person including things you have not observed – is known as halo effect.**

- The sequence we observe characteristics of a person is often determined by chance. **Sequence matter, however, because of halo effect increase** the weight of first impression, sometimes to the point that subsequent information is mostly wasted.
- To tame halo effect, decorrelate error, it means that derive the useful information from multiple independent sources of evidence.

### → What You See Is All There Is ( WYSIATI )

- They made that big decision on the basis of a good report from one consultant, WYSIATI. They did not seem to realize how little information they had.
- They didn’t want more information that might spoil their story. WYSIATI
- It helps to explain biases of judgement and choices, including
  - **Overconfidence**: the confidence that individuals have in their beliefs depends mostly on the quality of the story they can tell about what they see, even if they see little. We often fail to allow for the possibility that evidence that should be critical to our judgement is missing.

- **Framing Effects:** Different ways of presenting the same information often evoke different emotions.

## **8. How Judgement Happen.**

→ Evaluating people as attractive or not is a basic assessment. You do that automatically whether or not you want to, and it influences you.

→ There are circuits in the brain that evaluate dominance from the shape of the face. He looks the part for a leadership role.

→ The punishment won't feel just unless its intensity matches the crime. Just like you can match the loudness of a sound to the brightness of a light.

→ This was a clear instance of a mental shotgun. He was asked whether he thought the company was financially sound, but he couldn't forget that he likes their product.

## **9. Answering An Easier Question**

→ Do we still remember the question we are trying to answer? Or have we substituted an easier one?

→ The question we face is whether this candidate can succeed. The question we seem to answer is whether she interviews well. Let's not substitute.

→ He likes the project, so he thinks its costs are low and its benefits are high. Nice example of the affect heuristic. (the technical definition of heuristic is a simple procedure that helps find adequate, though often imperfect, answers to difficult questions.)

→ we are using last year's performance as a heuristic to predict the value of the firm several years from now. Is this heuristic good enough? What other information do we need?

## **10. The law of Small Number**

→ Yes, the firm has had three successful films since the new CEO took over. But it is too early to declare he has a hot hand.



→ I won't believe that the new trader is a genius before consulting a statistician who could estimate the likelihood of his streak being a chance event.

→ The sample of observation is too small to make any inferences. Let's not follow the law of small number.

→ I plan to keep the results of the experiment secret until we have a sufficiently large sample. Otherwise, we will face pressure to reach a conclusion prematurely.

## 11. **Anchors**

→ Anchoring effect: It occurs when people consider a particular value for an unknown quantity before estimating that quantity.

→ The firm we want to acquire sent us their business plan, with the revenue they expect. We shouldn't let that number influence our thinking. Set it aside.

→ Plans are best-case scenarios. Let's avoid anchoring on plans when we forecast actual outcomes. Thinking about ways the plan could go wrong is one way to do it.

→ Our aim in the negotiation is to get them anchored on this number.

→ Let's make it clear that if that is their proposal, the negotiation is over. We do not want to start there.

→ The defendant's lawyers put in a frivolous reference in which they mentioned a ridiculously low amount of damages, and they got the judge anchored on it.

## 12. **The Science of Availability:**

→ Availability heuristics: as the process of judging frequency by "the ease with which instances come to mind".

- It substitutes one question for another, for instance you wish to estimate the size of a category or the frequency of an

event, but you report an impression of the ease with which instances come to mind.

→ **Availability Bias:**

- Availability bias is a cognitive bias that occurs when individuals make judgments about the likelihood of events based on the ease with which examples or instances come to mind.
- In other words, people tend to overestimate the importance or likelihood of events that are more vivid, memorable, or easily recalled from their memory.
- It can make person overconfident.
- **Example:** If you recently watched news reports about shark attacks, you might become overly concerned about the likelihood of a shark attack when you go swimming in the ocean, even though the actual risk is quite low.

→ **Availability Effect:**

- The availability effect is essentially the same as the availability bias. It's the tendency for people to make judgments and decisions based on the availability of information.
- This term is sometimes used interchangeably with availability bias, but it highlights the idea that the availability of information can have a significant impact on decision-making.
- Example: If a person hears several stories about car accidents on the news, they may become more fearful of driving, even if the statistical likelihood of being in a car accident is low.

**13. Availability, Emotion, and Risk:**

→ The affect heuristic is a cognitive shortcut where people use their immediate emotional reactions to judge something as good or

bad, safe or risky, instead of engaging in a detailed analysis. It's a quick but potentially biased way to make decisions.

- She's raving about an innovation that has large benefits and no costs. I suspect the after heuristic.

→ This is an availability cascade: a nonevent that is inflated by the media and the public until it fills our TV screens and became all anyone is talking about.

#### **14. Tom W's Specialty:**

→ The lawn is well trimmed, the receptionist looks competent, and the furniture is attractive, but this doesn't mean it is a well-managed company. I hope the board does not go by representativeness.

→ This start-up looks as if it could not fail, but the base rate of success in the industry is extremely low. How do we know this case is different?

→ They keep making the same mistake: predicting rare events from weak evidence when the evidence is weak, one should stick with the base rates.

→ I know this report is absolutely damning, and it may be based on solid evidence, but how sure are we? We must allow for that uncertainty in our thinking.

#### **15. Linda: Less is more:**

→ They constructed a very complicated scenario and insisted on calling it highly probable. It is only a plausible story.

→ They added a cheap gift to the expensive product, and made the whole deal less attractive. Less is more in this case.

→ In the most situation, a direct comparison makes people more careful and more logical. But not always. Sometimes intuition beats logic even when the correct answer stares you in the face.

## **16. Causes Trump Statistics:**

→ Statistical base rates are generally underweighted, and sometimes neglected altogether, when specific information about the case at hand is available.

→ We can't assume that they will really learn anything from mere statistics. Let's show them one or two representative individual cases to influence their system 1.

→ No need to worry about this statistical information being ignored. On the contrary, it will immediately be used to feed a stereotype.

## **17. Regression to the Mean:**

→ Reward for the improved performance work better than punishment of mistakes.

→ When our attention is called to an event, associative memory will look for its cause -more precisely, activation will automatically spread to any cause that is already stored in memory. Casual explanation will be evoked when regression to the mean has an explanation but does not have cause.

→ Regression to the mean in psychology means that if someone does unusually well or poorly on a test or measurement, the next time they're tested, their score will likely be closer to average. So, extreme scores tend to even out over time because of luck or random factors. This is important to remember when interpreting test results or making decisions based on them.

## **18. Taming Intuitive Prediction:**

→ That start-up achieved an outstanding proof of concept, but we shouldn't expect to do as well in the future. They are still a long way from the market and there is a lot of room for regression.

→ Our intuitive prediction is very favorable, but it is probably too high. Let's take into account the strength of our evidence and regress the prediction toward the mean.

→ The investment may be a good idea, even if the best guess is that it will fail. Let's not say really believe it is the next Google.

→ I read one review of the brand and it was excellent. Still, that could have been a fluke. Let's consider only the brands that have a large number of reviews and pick the one that looks best.

## **19. The Illusion of Understanding.**

→ Narrative fallacies arise inevitably from our continuous attempt to make sense of the world.

→ We humans constantly make fool ourselves by constructing flimsy accounts of the past and believing they are true.

→ It is easier to construct a coherent story when you know little, when there are fewer pieces to fit into the puzzle.

→ Your inability to reconstruct past beliefs will inevitably cause you to underestimate the extent to which you were surprised by the past events. It is "I-knew-it -all-along effect" or "hindsight bias".

→ We are prone to blame decision makers for good decision that worked out badly and to give them too little credit for successful moves that appear obvious only after the facts. There is clear outcome bias.

→ Consumers have a hunger for a clear message about the determinants of success and failure in business, and they need stories that offer a sense of understanding, however illusory.

→ We get the casual relationship backward: we are prone to believe that the firm fails because its CEO rigid, when the truth is that the CEO appears to be rigid because the firm is failing. This is how the illusions of understanding are born.

## **20. The Illusion of Validity**

→ Under the stress of the event, we felt, each man's true nature revealed itself.

→ Confidence is a feeling, which reflects the coherence of the information and the cognitive ease of processing.

→ Facts that challenge such basic assumptions- and thereby threaten people's livelihood and self-esteem- are simply not absorbed. The mind does not digest them. This is particularly true of statistical studies of performance, which provide base-rate information that people generally ignore when it clashes with their personal impressions from experiences.

→ Our tendency to construct and believe coherent narratives of the past makes it difficult for us to accept the limits of our forecasting ability.

→ He knows that the record indicates the development of this illness is mostly unpredictable. How can he be so confident in this case? Sounds like an illusion of validity.

→ She has a coherent story that explains all she knows, and the coherence makes her feel good.

→ What makes him believe that he is smarter than the market? Is this an illusion of skills?

→ She is hedgehog. She has a theory that explains everything, and it gives her the illusion that she understands the worlds.

→ The question is not whether these experts are well trained. It is whether their world is predictable.

## **21.     Intuitions vs Formulas**

→ People feel that they can overrule the formula because they have additional information about the case, but they are wrong more often than not.

→ Another reason for the inferiority of expert judgement is that humans are incorrigibly inconsistent in making summary judgement of complex information.

→ The research suggests a surprising conclusion: to maximize predictive accuracy, final decisions should be left to formulas, especially in low-validity environments.

→ Statistical rules are superior to intuitive “clinical” judgement.

→ We should abandon the procedure in which the interviewers’ global evaluation of the recruit determined the final decision.

→ Suppose you need to hire a sales representative for your firm. If you are serious about hiring the best possible person for the job, this is what you should do. First, select a few traits that are prerequisites for success in this position (technical proficiency, engaging personality, reliability, and so on) Don’t overdo it- six dimensions is a good number.

→ Let’s decide in advance what weight to give to the data we have on the candidate’s past performance. Otherwise we will give too much weight to our impression from the interviews.

## **22. Expert Intuition: When Can We Trust It?**

→ “How much expertise does she have in this particular task? How much practice has she had?”

→ “Does he really believe that the environment of start-ups is sufficiently regular to justify an intuition that goes against the base rates?”

→ “She is very confident in her decision, but subjective confidence is a poor index of the accuracy of a judgement”

→ “Did he really have an opportunity to learn? How quick and how clear was the feedback he received on his judgements?”

→ Expertise takes long time to develop.

→ The associative machine is set to suppress doubt and to evoke ideas and information that are compatible with the currently dominant story. A mind that follows WYSIATI will achieve high confidence much too easily by ignoring what it does not know. It is therefore not surprising that many of us are prone to have high confidence in unfounded intuitions.

In other words, do not trust anyone-including yourself-to tell you how much you should trust their judgement.

→ When do intuition is trusted:

- An environment that is sufficiently regular to be predictable.
- An opportunity to learn these regularities through prolonged practice.

## **23. The Outside View**

→ The proper way to elicit information from a group is not by starting with a public discussion but by confidentially collecting each person's judgement.

→ Planning fallacy are unrealistically close to the best-case scenarios.

→ Reference class forecasting – planner should therefore make every effort to frame the forecasting problem so as to facilitate utilizing all the distributional information that is available.

→ “He’s taking an inside view. He should forget about his own case and look for what happened in other cases.”

→ She is the victim of a planning fallacy. She’s assuming a best-case scenario, but there are too many different ways for the plan to fail, and she cannot foresee them all.

→ Suppose you did not know a thing about this particular legal case, only that it involves a malpractice claim by an individual against a surgeon. What would be your baseline prediction? How many of these cases succeed in court? How many settle? What are the amounts? Is the case we are discussing stronger or weaker than similar claims?

→ We are making an additional investment because we do not want to admit failure. This is an instance of the sunk-cost fallacy.

## **24. The Engine of Capitalism**

→ Highly optimistic leaders took excessive risks.

→ They have illusion of control. They seriously underestimate the obstacles.

→ They seem to suffer from an acute case of competitor neglect.



→ This is case of overconfidence. They seem to believe they know more than they actually do know.

→ We should conduct a premortem session. Someone may come up with a threat we have neglected.

## **25. Bernoulli's Errors**

→ He was very happy with a \$20,000 bonus three ago, but his salary has gone up by 20% since, so he will need a higher bonus to get the same utility.

→ Both candidates are willing to accept the salary we're offering, but they won't be equally satisfied because their reference points are different. She currently has a much higher salary.

→ She's suing him for alimony. She would actually like to settle, but he prefers to go to court. That's not surprising – she can only gain, so she's risk averse. He, on the other hand, faces options that are all bad, so he'd rather take the risk.

## **26. Prospect Theory**

→ People became risk seeking when all their options are bad, but theory-induced blindness had prevailed.

→ Loss loom larger than gains and that people are loss averse.

→ "He suffer from extreme loss aversion, which makes him turn down very favorable opportunities.

→ Considering her vast wealth, her emotional response to trivial gains and losses makes no sense.

→ He weighs losses about twice as much as gains, which is normal.

## **27. The Endowment Effect**

→ "She didn't care which of the two offices she would get, but a day after the announcement was made, she was no longer willing to trade. Endowment effect.

→ These negotiations are going nowhere because both sides find it difficult to make concessions, even when they can get something in return. Losses loom larger than gains.

→ When they raised their prices, demand dried up.

→ He just hates the idea of selling his house for less money than he paid for it. Loss aversion is at work.

→ He is a miser, and treats any dollar he spends as a loss.

## **28. Bad Events**

→ This reform will not be pass. Those who stand to lose will fight harder than those who stand to gain.

→ Each of them thinks the other's concessions are less painful. They are both wrong, of course. It's just the asymmetry of losses.

→ They would find it easier to renegotiate the agreement if they realized the pie was actually expanding. They're not allocating losses; they are allocating gains.

→ Rental prices around here have gone up recently, but out tenants don't think it's fair that we should raise their rent, too. They feel entitled to their current terms.

→ My clients don't resent the price hike because they know my costs have gone up, too. They accept my right to stay profitable.

## **29. The Fourfold Pattern**

→ Outcomes that are almost certain are given less weight than their probability justifies.

→ Because of probability effect, we tend to overweight small risks and are willing to pay far more than expected value to eliminate them altogether.

→ Improbable outcomes are over-weighted – this is the probability effect. Outcomes that are almost certain are underweighted relative to actual certainty.

→ When an unlikely event becomes that focus of attention, we will assign it much more weight than its probability deserves.

→

	Gains	Losses
High Probability Certainty Effect	<ul style="list-style-type: none"> <li>• 95% chance to win \$10,000</li> <li>• Fear of disappointment</li> <li>• Risk Averse</li> <li>• Accept unfavorable settlement.</li> <li>• (to lock in sure gain)</li> </ul>	<ul style="list-style-type: none"> <li>• 95% chance to lose \$10,000</li> <li>• Hope to avoid loss.</li> <li>• Risk Seeking</li> <li>• Reject favorable settlement.</li> <li>• (Reject favorable settlement)</li> </ul>
Low Probability Possibility Effect	<ul style="list-style-type: none"> <li>• 5% chance to win \$10,000</li> <li>• Hope of large gain</li> <li>• Risk Seeking</li> <li>• Reject favorable settlement.</li> <li>• (gamble lottery)</li> </ul>	<ul style="list-style-type: none"> <li>• 5% chance to lose \$10,000</li> <li>• Fear of large loss</li> <li>• Risk Averse</li> <li>• Accept unfavorable settlement.</li> <li>• (insurance is bought)</li> </ul>

### 30. Rare Events

→ Highly unlikely events are either ignored or overweighted.

→ Emotion and vividness influence fluency, availability, and judgement of probability – and thus account for our excessive response to the few rare events that we do not ignore.

→ Adding irrelevant but vivid details to a monetary outcome also disrupts calculation.

→ Denominator neglect—if your attention is drawn to the winning marbles, you do not access the number of nonwinning marbles with the same care.

→ The more vivid description produces a higher decision weight for the same probability.

→ The power of format creates opportunities for manipulation, which people with an axe to grind know how to exploit.

→ Choices from description are overweighted relative to their probability. In sharp contrast, overweighting is never observed in choice from experience and underweighting is common.

### **31. Risk Policies**

→ Tell. Her to think like a trader! You win a few, you lose a few.

→ I decide to evaluate my portfolio only once a quarter. I am too loss averse to make sensible decisions in the face of daily price fluctuations.

→ They never buy extended warranties. That's their risk policy.

→ Each of our executives is loss averse in his or her domain. That's perfectly natural, but the result is that the organization is not taking enough risk.

### **32. Keeping Score**

→ It takes an active and disciplined mind to raise such a difficult question.

→ A rational agent would have a comprehensive view of the portfolio and sell the stock that is least likely to do well in the future, without considering whether it is a winner or a loser.

→ Realizing losses reduces your taxes, while selling winners exposes you to taxes.

→ The decision to invest additional resources in a losing account, when better investment are available, is known as the sunk-cost fallacy, a costly mistake that is observed in decision large and small. Driving into the blizzard because one paid for tickets is a sunk-cost error.

→ He has separate mental accounts for cash and credit purchase. I constantly remind him that money is money.

→ We are hanging on to that stock just to avoid closing our mental account at a loss. It's the disposition effect.

→ We discovered an excellent dish at that restaurant and we never try anything else, to avoid regret.

→ The salesperson showed me the most expensive car seat and said it was the safest, and I could not bring myself to buy the cheaper model. It felt like a taboo tradeoff.

### **33. Reversals**

→ The BTU units means nothing to me until I saw how much air-conditioning units vary. Joint evaluation was essential.

→ You say this was an outstanding speech because you compared it to her other speeches. Compared to other, she was still inferior.

→ It is often the case that when you broaden the frame, you reach more reasonable decisions.

→ When you see cases in isolation, you are likely to be guided by an emotional reaction of system 1.

### **34. Frames and Reality**

→ They will feel better about what happened if they manage to frame the outcome in terms of how much money they kept rather than how much they lost.

→ Let's reframe the problem by changing the reference point. Imagine we did not own it; how much would we think it is worth?

→ Charge the loss to your mental account of 'general revenue' – you will feel better!

→ They ask you to check the box to opt out of their mailing list. Their list would shrink if they asked you to check a box to opt in.

→ The framing study yielded three main findings:

- A region that is commonly associated with emotional arousal (the amygdala) was most likely to be active when subjects' choices conformed to the frame. This is just as we would expect if the emotionally loaded words KEEP and LOSE produce an immediate tendency to approach the sure thing (when it is framed as a gain) or avoid it (when it is framed as a loss). The amygdala is accessed very rapidly by emotional stimuli – and it is a likely suspect for involvement in system 1.
- A brain region known to be associated with conflict and self-control (the anterior cingulate) was more active when subjects did not do what comes naturally—when they chose the sure thing in spite of its being labeled LOSE. Resisting the inclination of system 1 apparently involves conflict.
- The most "rational" subjects—those who were the least susceptible to framing effects—showed enhanced activity in a frontal area of the brain that is implicated in combining emotion and reasoning to guide decisions. Remarkably, the "rational" individuals were not those who showed the strongest neural evidence of conflict. It appears that these elite participants were (often, not always) reality-bound with little conflict.

## **35. Two Selves**

→ "Nature has placed mankind under the governance of two sovereign masters, pain and pleasure. It is for them alone to point out what we ought to do, as well as to determine what shall do" – Jeremy Bentham

→ You are thinking of your failed marriage entirely from the perspective of the remembering self. A divorce is like a symphony

with a screeching sound at the end-the fact that it ended badly does not mean it was all bad.

→ This is a bad case of durations neglect. You are giving the good and the bad part of your experience equal weight, although the good part lasted ten times as long as the other.

### **36. Life as a Story**

→ He is desperately trying to protect the narrative of a life of integrity, which is endangered by the latest episode.

→ The length to which he was willing to go for a one-night encounter is a sign of total duration neglect.

→ You seem to be devoting your entire vacation to the construction of memories. Perhaps you should put away the camera and enjoy the moment, even if it is not very memorable?

→ She is an Alzheimer's patient. She no longer maintains a narrative of her life, but her experiencing self is still sensitive to beauty and gentleness.

### **37. Experienced Well-Being**

→ Flow—a state that some artists experience in their creative moments and that many other people achieve when enthralled by a film, a book, or a crossword puzzle: interruptions are not welcome in any of these situations.

→ The objective of policy should be to reduce human suffering. We aim for a lower U-index in society. Dealing with depression and extreme poverty should be a priority.

→ The easiest way to increase happiness is to control your use of time. Can you find more time to do the things you enjoy doing?

→ Beyond the satiation level of income, you can buy more pleasurable experiences, but you will lose some of your ability to enjoy the less expensive ones.

### **38.     Thinking About Life**

→ She thought that buying a fancy car would make her happier, but it turned out to be an error of affective forecasting.

→ His car broke down on the way to work this morning and he's in a foul mood. This is not a good day to ask him about his job satisfaction!

→ She looks quite cheerful most of time, but when she is asked she says she is very unhappy. The questions must make her think of her recent divorce.

→ Buying a larger house may not make us happier in the long term. We could be suffering from a focusing illusion.

→ He has chosen to split his time between two cities. Probably a serious case of miswanting.